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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,513	07/03/2003	Brian Y. Lim	ATOMP001	4790

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AKA CHAN LLP
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EXAMINER

ELVE, MARIA ALEXANDRA

ART UNIT	PAPER NUMBER
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1725

NOTIFICATION DATE	DELIVERY MODE
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08/09/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-INBOX@AKACHANLAW.COM

Office Action Summary

Application No.

10/613,513

Applicant(s)

LIM ET AL.

Examiner

M. Alexandra Elve

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 29-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 29-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 states "a set of islands of catalyst"; it is not clear how a set of islands of catalyst can be associated with one die. Is the die very large, are the catalyst areas scattered about?

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 states "all catalyst throughout die". Is the catalyst on, in or near the die(s)? The independent claim refers to dies, while claim 9 discloses a die.

Double Patenting

Claims 1-18 & 29-55 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-36 of copending Application No. 10/613,217. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 & 29-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colbert et al. (US Pat. 6,756,026) in view of Haruta (USPN 6,110,291) and Nakayama (USPAP 2004/0087116 A1).

Colbert et al. discloses a system in which nanocomponents for nanodevices are made. The system has a mounting element such as a precision translation stage(s) having movement capabilities in the XYZ directions. Mounting requires a minimum of two precision stages. Carbon feedstock gas may be added into the reactor. A catalyst may be formed in-situ using temperatures of 400 to 2000 C. Heat can be supplied in a locally using a laser (e.g. argon), microwave energy, or R-F energy. (abstract, figures, col. 4, lines 44-58, col. 7, lines 12-40, col. 9, lines 30-54, col. 25, lines 1-31, col. 26, lines 34-50)

Colbert et al. does not teach multiple radiating energy beams (prongs) or the use of a beamsplitter or an electric field generator.

Haruta et al. discloses a laser apparatus for forming thin films. The apparatus includes a laser, a chamber, a target, and a substrate holder. In an embodiment the target is laser evaporated in order to generate plumes; these plumes are deposited onto the substrate. In addition the embodiment has a beam splitter, a mirror, a linear moving stage and a linear moving stage controlling apparatus. The laser beam emitted from the laser unit is divided into a plurality of laser beams by means of a plurality beam splitter, which is directed into a plurality of mirrors, condensers, and inlet windows and then is

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incident onto a plurality of portions of the raw material target. This in turn generates plumes for deposition. (abstract, figures, col. 43-45)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a beamsplitter as taught by Haruta et al. in the Colbert et al. system because this would yield multiple beams and hence decrease the processing time required to form a nanotube product.

Nakayama discloses a semiconductor device, which is laser, treated and subjected to heating and cooling. One treatment is applying a magnetic field to the workpiece using a magnetic field generator.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a magnetic field generator as taught by Nakayama et al. in the Colbert et al. system because this can deposition effects, much that same as a catalyst.

The magnetic field generator is a functional equivalent to an electric field generator, by admission in applicant's specification.

Intended use has been continuously held not to be germane to determining the patentability of the apparatus, Ex parte Wikdahl 10 USPQ 2d 1546 (BPAI 1989); Ex parte McCullough 7 USPQ 2d 1889, 1891 (BPAI 1988); In re Finsterwalder 168 USPQ 530 (CCPA 1971); In re Casey 152 USPQ 235, 238 (CCPA 1967); Ex parte Masham 2 USPQ 2d. 1647. Duplication of parts was held to have been obvious. In re Harza 124 USPQ 378.

Response to Arguments

Applicant's arguments filed 5/16/07 have been fully considered but they are not persuasive.

Applicant argues that one skilled in the art would know what is meant by a set of island of catalyst on a die. The examiner respectfully disagrees because a set of islands is indefinite. In response to applicant's argument that a set of islands of catalyst is not taught by the prior art, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In response to applicant's argument that Colbert, Haruta and Nakayama are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, all references are drawn to laser systems using in the manufacture of semiconductors and associated systems.

Applicant argues that heating of the feedstock gas is not taught by the prior art. The examiner respectfully notes that this limitation is not present in applicant's claims.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, all references are drawn to laser systems using in the manufacture of semiconductors and associated systems.

Applicant argues that the heating on at least one die is not taught by the prior art. The examiner respectfully notes that the stage may be heated and furthermore, the apparatus is capable of supporting either type of workpiece. In response to applicant's argument that the die support and heating is not taught, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Applicant argues that the prior art does not teach the use of infrared. The examiner respectfully disagrees because Haruta discloses infrared. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that temperature and a stage are not taught by the prior art. The examiner respectfully disagrees because Nakayama discloses temperature and the

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stage. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that the delivery of feedstock gas to the catalyst is not taught. The examiner respectfully disagrees because Colbert discloses that feedstock gas may be added to the reactor and it is known that the catalyst is contained within the reactor.

Applicant argues that a magnetic field generator that is adjustable is not taught by the prior art. The examiner respectfully disagrees because the generator is taught, see office action above and furthermore, it is the examiner's position that the apparatus of the prior art must be adjustable to some extent because there is always variation in workpieces, thus, the adjustable position is inherent to the apparatus.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on 571-272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

August 6, 2007.

/M. Alexandra Elve/
M. Alexandra Elve
Primary Examiner 1725